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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,461	02/17/2004	Yongbin Wei	030238	1789
23696 7590 08/09/2007 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			EXAMINER DEPPE, BETSY LEE	
			ART UNIT 2611	PAPER NUMBER
			NOTIFICATION DATE 08/09/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/781,461	<b>Applicant(s)</b> WEI ET AL.	
	<b>Examiner</b> Betsy L. Deppe	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 12-21, 23, 25, and 28-32 is/are rejected.
- 7) ☒ Claim(s) 6, 8-11, 22, 24, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because the description in paragraph [0033] is inconsistent with Figure 1. For example, paragraph [0033] refers to "130" as a base station controller whereas Figure 1 shows "130" as a switching station. Furthermore, "140" in Figure 1 is not a network that couples the base station 110 as described.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it uses the form and legal phraseology often used in patent claims (see "comprises" on line 3). Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

- a. on page 7, the sentence on lines 18-21 is grammatically awkward;
- b. on page 8, line 18, "base station 130" is inconsistent with page 8, line 17 and "130" in Figure 1;
- c. on page 16, line 23, it appears that "receiver. After" should be "receiver, after" in order to be grammatically correct;
- d. on page 20, line 15, "Theses" should be "These";
- f. on page 20, line 28, "estimated" should be "estimate"; and
- g. on page 20, line 32, the comma should be deleted.

Appropriate correction is required.

***Claim Objections***

5. The claims are objected to because of the following informalities:
- a. in claims 6-11 and 22-26, it is unclear whether “successfully demodulated” should be “successfully decoded.” Paragraphs [0069]-[0080] describes whether the “decoding” of the rate indicator is successful whereas the respective claims recite “successfully demodulating.” The claims language should be consistent with the detailed description for clarification. Either the claims or paragraphs [0069]-[0080] should be amended to overcome this objection.
  - b. in claim 5, line 1, “data” should be inserted after “first” and “second,” respectively (see claim 1, line 2);
  - c. in claim 6, line 1, “data” should be inserted after “first” and “second,” respectively (see claim 1, line 2);
  - d. in claim 12, line 3, “the first signal” should be “the first data signal” (see claim 1, line 2);
  - e. in claim 13, line 3, “the first signal” should be “the first data signal” (see claim 1, line 2);
  - f. in claim 9, line 2, “the second data channel” should be “at least the portion of the second data signal” (see claim 17, line 9)
  - g. in claim 21, line 2, “data” should be inserted after “first” and “second,” respectively;
  - h. in claim 21, line 3, the Examiner suggests changing “and second data signal” to “and the stored second data signal” for clarification;

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- i. in claim 22, line 2, "data" should be inserted after "first" and "second," respectively; and
- j. in claim 27, lines 4 and 6, "a demodulation reference" should be "the demodulation reference".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

- 6. Claims 7, 12, 13, 23, 25, 28 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
- 7. In claims 12 and 13, it is unclear whether "the demodulation reference" on line 2 and lines 2-3, respectively, is referring to "a demodulation reference" in claim 1, line 3 or claim 1, line 6.
- 8. In claims 7 and 23, it is unclear what is meant by demodulating the portion of the second data signal when the portion is received. Since it is inherent/implicit that the signal must be received before it can be demodulated, it is unclear how claims 7 and 23 are intended to further limit claims 6 and 22, respectively.
- 9. In claim 25, it is unclear what is done "in parallel."
- 10. In claims 28 and 29, it is unclear whether "the demodulation reference" on lines 2 and 3, respectively, is referring to "a demodulation reference" in claim 17, lines 7-8 or claim 17, line 9.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

12. Claims 1-3, 14-19 and 30-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Ling et al. (US Patent No. 6,414,988 B1).

13. With regard to claims 1 and 3, Ling et al. discloses the claimed invention including a receiver configured to receive a pilot signal, a first data signal and a second data signal wherein the first data signal is demodulated using the pilot signal as a reference point and the second data signal is demodulated using the first data signal as a demodulation reference. (See Figures 2 and 3; column 4, line 67 - column 5, line 8; column 5, lines 24-26; and column 11, lines 59-61)

14. With regard to claims 2 and 18, Figure 3 of Ling et al. discloses the claimed invention including decoding symbols (212), re-encoding the data bits (224), and using the symbols to provide a demodulation reference (i.e. the output of channel estimator 218B). (See column 9, lines 24-67)

15. With regard to claims 3 and 19, Ling et al. discloses the claimed invention including demodulating the second data signal (via 238) based upon the first data signal (via output of 218B) and the pilot signal (via 252) in combination (i.e. 230). (See column 10, lines 18-21 and column 11, line 59 - column 12, line 2)

16. With regard to claims 14 and 30, Ling et al. discloses the claimed invention including the first data signal with a data rate less than the data rate of the second data signal. (See column 5, lines 3-8)

17. With regard to claims 15 and 31, Ling et al. discloses the claimed invention including the pilot, first data and second data signals comprised of CDMA signals. (See column 5, lines 42-53)

18. With regard to claims 16 and 32, Ling et al. discloses the claimed invention including implementing the method in a base station. (See column 5, lines 42-53)

***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ling et al. as applied to claims 1 and 17, respectively, above, and further in view of Teder et al. (US Patent No. 5,544,156). Ling et al. discloses the claimed invention except for the first channel signal comprising a rate indicator signal.

21. Teder et al. teaches transmitting a rate indicator signal with the data signal whereby the rate indicator signal is used to demodulate the data signal. (See column 2, lines 39-59) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a rate indicator signal as the first channel signal in Ling et al.



in order to improve the accuracy of the channel estimate for demodulating the data channel. The channel estimate is more accurate since both the pilot signal and the information rate (see Teder et al., column 2, lines 53-59) are known to the receiver.

22. Claims 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ling et al. as applied to claims 1 and 17, respectively, above, and further in view of Holtzman et al. (US Pub. No. 2002/0021683 A1). Ling et al. discloses the claimed invention except for buffering the pilot, first data and second data signals and demodulating the signals after the entire frame has been buffered.

Holtzman et al. teaches buffering (or storing) a received data frame. It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a buffer to Ling et al. and perform the demodulating after the entire frame has been buffered (i.e. received) in order to ensure the entire frame of data has been received before demodulating the data. Waiting until the entire frame of data is received before demodulating avoids unnecessary processing and power consumption in the event that the transmission is interrupted.

***Allowable Subject Matter***

23. Claims 6, 8-11, 22, 24, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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**Conclusion**

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Wednesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Betsy L. Deppe  
Primary Examiner  
Art Unit 2611